

SPECIFICATION

The device is a child occupancy alarm system for automobiles. The device consists of a flexible rubber pad, a pressure-monitoring unit, a temperature monitoring device, and an alarm system. All aspects of the device are condensed to allow mobility to any car seat or vehicle.

The flexible rubber pad lies in a child's car seat directly under the child, between the child and the car seat. The flexible rubber pad has an air filled pocket, which only allows air to escape through an air-tight flexible rubber tube, which is attached to a pressure monitoring unit. The weight of the child forces the air out of the pocket, through the tube and into the pressure-monitoring unit.

The pressure-monitoring unit is a small plastic box with an interior piston that is forced in the direction of the air pressure. The air being forced out of the air filled pocket by the weight of the child forces the piston in a direction, within the pressure-monitoring unit, whereby activating the device.

Once activated the temperature-monitoring device begins to monitor the interior temperature of the vehicle after a programmable amount of time has elapsed.

The delay allows the interior temperature of the vehicle to reach normal levels before the device begins to monitor. Should the interior temperature of the vehicle reach danger levels (high or low) an alarm is triggered.

The device has three different alarm types. Because of cost and preference to the consumer, the device is capable of having any combination of these three alarms. The first is a bright light or signal clearly visible to anyone outside the vehicle and within a reasonable distance. The signal would read "child left inside

vehicle get help.” The device also has a high pitched siren on the outside of the vehicle or is wired direct to the vehicles car horn. Lastly, the device has a transmitting unit, which sends signals to the local law enforcement agency, emergency rescue agency, and/or GPS system or other portable receiver.

The device also has child occupancy confirmation devices consisting of sensor beams located on each side of the flexible rubber pad. When the pad is placed into the seat of a child safety seat, the flexible rubber pad bends allowing the sensors on each side of the pad to communicate with each other. These sensors have a light mechanism on one side of the pad and a reflector on the other. When a child is placed into the seat this light beam is broken therefore confirming that the seat is occupied. The device has a second confirmation that the seat is occupied, which is through direct wire connection to the seat belt. These wire connections are attached to each end of the seatbelt. When the seat belt is buckled this makes the connection between the two wires completing the circuit and confirming the child seat is occupied.

The device operates on two power sources depending on the preference of the end user. The first is by a direct wire to the vehicle via an alternate power outlet used for cigarette lighters and cell phone chargers. The second power source is by standard battery power.

The device has further safety features incorporated into it. The first is a light indicating that the car seat is occupied and is operating properly. The second is the different colored light indicating low power. The third is a power saving mode whereby the unit turns itself off when the seat is not occupied. The fourth is a

physical deactivation device comprising of a physical switch attached directly to the system or more expensive models contain remote control deactivation.

TITLE OF DEVICE

Child seat occupancy alarm system for automobiles

CROSS-REFERENCE TO RELATED APPLICATIONS

Various devices have been invented to detect the presence of a child in an unattended or parked vehicle, however they require either the user to install motion detecting equipment, attach vital function monitoring devices to the child, or they are only used to indicate the presence of a child while in operation or during an accident. For example U.S. Pat. No. 5,793,291 is a motion detecting device, which monitors the interior temperature of the vehicle. In the event, an operator of the vehicle locks a child or animal in a parked car and temperatures reach life threatening levels an alarm is triggered. Although the benefits are the same, this device requires installation of motion sensors as well as requires movement of the child/animal to activate the alarm. It is not mobile to alternate vehicles or car seats as intended in my device. Another similar device is U.S. Pat. No. 6,393,348, which monitors the vital function of the child. This device monitors and relays vital functions of the child to a receiver. This device was developed to promote safer driving, by monitoring the vital functions of a child placed in the back seat of a vehicle, whereby allowing the driver to view the vital functions of the child while driving. It requires direct attachment to the child and only detects when vital functions are outside of a pre-determined range. By the

time vital functions reach danger levels to trigger an alarm, a child left in a parked vehicle could suffer health damages if not death before being rescued. Another similar device is U.S. Pat. No. 5,260,684, which detects the presence of an infant in a vehicle, however this is only for use while in operation or after being involved in an accident. This system brings awareness of a child on board while in operation and allows for the location of the child after an accident. It does not provide a mechanism to detect and monitor the interior temperature of a vehicle should a child be left in a vehicle during life threatening temperatures.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX

Not applicable

BACKGROUND OF THE DEVICE

This device is directed to an alarm system used in-conjunction with a car seat to alert when a child has been left inside a vehicle during life threatening temperatures.

Studies and actual events have proven that infant and/or child safety seats should not be placed in the front seat of a vehicle, especially those equipped with a passenger side airbag. This of course has lead to concerned parents placing their children in the rear seat of their vehicle. Given today's hectic schedule of

two working parents, placing a child in the rear seat often times means out of sight, out of mind. One child being left unattended in a vehicle during life threatening temperatures is too many. News publishing's have suggested placing something you need that day for work by your child. How many times has someone gone off and forgotten needed work items in their car or at home. To rely on this method of safety for a child is unacceptable.

BRIEF SUMMARY OF THE DEVICE

The device is an alarm system used in conjunction with a car seat, which alerts when a child has been left in a vehicle during life threatening temperatures.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

1A This view depicts the pad laying flat, from a top view looking down. It shows the optional sensor beams on the left and right side, with the air/gel filled pocket in the middle with a lead tube and wire harness exiting to the pressure monitoring unit.

1B This view depicts the pad laying flat, from a horizontal view, to display the thickness and portability of the device

1C This view depicts the pad in use with a car seat

DETAILED DESCRIPTION OF THE DEVICE

The device is child occupancy alarm system for automobiles. It consists of a flexible rubber pad containing an air filled pocket, a pressure monitoring unit, sensors, and a temperature monitoring apparatus. The pad lays in the seat of a

child's car seat underneath the child, between the child and the car seat. The weight of the child forces said air into a pressure monitoring unit activating the system after a programmable amount of time has elapsed. This delay allows the interior temperature of the vehicle to reach normal operating temperatures. Once activated the temperature monitoring device will begin to monitor the interior temperature of the vehicle as long as the car seat is occupied. Should the child be left inside a parked vehicle and the temperature reach pre-determined danger or life threatening temperatures, an alarm will be triggered